

COLUMBIA RIVER REGIONAL FORUM

TECHNICAL MANAGEMENT TEAM

October 24, 2007 TMT Meeting

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS

Facilitator: Robin Gumpert

Notes: Erin Halton

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Official Minutes/Facilitator Notes

The facilitator notes and official meeting minutes from the 9/26 TMT meeting were posted, and with no further comments or edits, were finalized during today's meeting.

Vernita Bar/Priest Rapids Operations

Russell Langshaw, Grant County PUD, referred TMT to a document linked to the agenda that showed a 10/21 survey found no redds on the ground but observed four potential spawners in the area. Langshaw said spawning would likely be initiated by 10/27-28, with flows expected to be in the range of 60 kcfs during the day and the low 70's during nighttime hours. Langshaw clarified that this was the third survey conducted this season and that no evaluation would be conducted as escapement goals were being met and inflows were low.

Action/Next Steps: Langshaw will provide TMT with an update at the 11/7 meeting.

2007 Water Supply Forecasting Techniques

Randy Wortman, COE, referred TMT to a water supply forecasting techniques presentation linked to the TMT agenda. He walked TMT members through several graphs, including seasonal flow characteristics, monthly flood control draft targets, ESP forecasts, and daily/monthly regression modeling. Wortman said that the COE uses these and other tools in their modeling, along with River Forecast Center (RFC) weekly ESP forecasts. He noted that for water year 2007, the ESP model calibration for Libby was adjusted by the NWRFC (i.e. the model structure for the Libby Basin was changed). Wortman noted that the NWRFC's monthly ESP forecasts are used by TMT and other groups for decision making and that there is promise for a future ability to utilize Natural Resources Conservation Service (NRCS) daily forecasts. Wortman clarified that the flood control draft points are determined by the COE's official regression forecasts, provided by the 10th of each month.

Study Results: Measuring Behavioral Responses of Spawning Chum Salmon to Elevated River Flows

Ken Tiffan, USGS, referred TMT to a presentation on 2005 chum spawning study results linked to the TMT agenda. The study focused on the effects of elevated flow levels on

chum spawning in the Ives Island area. Tiffan said that 10 eight-hour tests had been conducted using hydrophones and acoustic tags to determine fish movement, duration of their travel, and the timing of their return to their redds. Tiffan's slides included graphs of tracked fish movement/returns to redd locations for tailwater elevations of 13.5', 14.7' and 15.5'. Study results showed that fish typically moved up and down the shoreline when tailwater elevations were between 14.7-15.5' and returned to their redd locations once flows decreased. Tiffan said that the highest digging activity was observed at the lowest velocities/tailwater elevations, noting that activities associated with spawning (e.g. nest digging) appear to be greatly reduced at 15.5 feet.

Action/Next Steps: Cindy LeFleur, WA, said she will provide a schedule for weekly surveys near Ives Island, Multnomah Falls and I-205 planned in 2007 to post to the TMT web page, and that information gathered from the surveys will continue to be provided to the FPC. As chum typically arrive during the first week of November, there may be a need for a TMT call to discuss chum updates prior to the next scheduled meeting on 11/7.

Burbot Operations

There was no SOR or discussion of burbot operations. Jim Adams, COE, said that there likely would not be any SOR submitted for burbot operations this year.

2008 Draft Water Management Plan

Scott Boyd, COE, said comments on the draft 2008 WMP from Montana, USFWS, NWS and the BOR had been posted to the TMT web page. As was noted at the last TMT meeting, many are waiting until the next draft BiOp is released to provide any comment on the 2008 WMP.

Special Note: Facilitator Robin Gumpert reminded TMT members that the next IT meeting is scheduled for Thursday, November 8 from 9am-3:00 pm at the NPCC 11th floor conference room. The draft BiOp will be presented and discussed. TMT members were encouraged to attend that meeting.

TMT Year End Review Agenda

TMT members and other meeting attendees provided feedback and made edits to the TMT Year End Review agenda, with some discussion around which agenda items might be better placed at an upcoming 2008 TMT business meeting rather than the year end review. TMT members noted that it will be especially helpful to review both success stories and challenges of 2007 as we head into 2008.

Action/Next Steps: The Facilitation Team will revise the agenda and distribute the updated version to TMT members. The agenda will be finalized at the 11/7 TMT meeting.

Operations Review

Reservoirs – Libby was at elevation 2434.9' with in and out flows at 4.5 kcfs. Albeni Falls was at elevation 2057.4' with 13.2 kcfs in and 19.2 kcfs out. Dworshak was at elevation 1517.59' with 1.3 kcfs in and 1.5 kcfs out. Lower Granite averaged 20 kcfs inflows, and the 7-day average flows at McNary were in the range of 90-95 kcfs. Grand Coulee was at elevation 1287.2' with outflows in the range of 60-70 kcfs. Hungry Horse

was at elevation 3533.46', with outflows at 2 kcfs and meeting Columbia Falls minimums.

Fish – Paul Wagner, NOAA, reported that Fall Chinook passage numbers at Lower Granite were up to 1500 fish on 10/22; passage at McNary was in the low 400 per day range. Overall Steelhead passage was tracking close to the 10-year average. Snake River Fall Chinook were tracking a little above the 10-year average. Cindy LeFleur, WA, said that she would provide a summary on jack passage counts at the TMT year end review.

Power system – No report.

Water quality – No report.

Next TMT Meeting: 11/7, 9-noon **NOAA Fisheries Conference Room

An agenda will be developed for the next meeting. Items include:

- Finalize TMT Year End Review Agenda
- Chum Operations
- 2007 Zero Nighttime Flow

**Columbia River Regional Forum
Technical Management Team Conference Call
October 24, 2007**

1. Introduction

Today's conference call was chaired by Jim Adams (COE) and facilitated by Robin Gumpert (D.S. Consulting), with representatives from NOAA, COE, BPA, BOR, USGS, the Nez Perce Tribe, FPC, CRITFC, Montana, Washington, Oregon, and Idaho attending either in person or by phone. The following is a summary (not a verbatim transcript) of the topics discussed and decisions made at the meeting. Anyone with questions or comments about these notes should provide them to the TMT chair or bring them to the next meeting.

2. Review Meeting Minutes

There were no comments on either the facilitator's notes or official minutes for the September 26 meeting. These notes were therefore finalized.

3. Vernita Bar

Russell Langshaw, Grant County PUD, presented the October 28 Priest Rapids flow request and the results of the October 21 Chinook redd count linked to today's agenda. Four redds have already been found in the Vernita Bar area, so the finding of a fifth redd will trigger the initial date of spawning – possibly within the next week.

The spawning study Grant PUD had planned wasn't done this year for two reasons. Flows were too low to sustain even a one-hour peak, and escapement is low this year. Both factors would make it difficult to interpret the study results. Inflows continue to be low, with current projections of around 60 kcfs for daytime and in the low 70's at night.

Langshaw addressed widespread concerns about escapement at McNary into the Hanford Reach. Significant numbers of fish have been passing Priest Rapids Dam, but only a low percentage is anticipated to escape into the reach. Despite the fact that escapement is less than in recent years, escapement goals are being met.

Langshaw will give an update at the next TMT meeting November 7.

4. Comparison of Water Supply Forecasting Techniques

Randy Wortman (COE) described the various techniques available for forecasting seasonal water supply. Water supply forecasts are key to how the COE operates the reservoirs and sets flood control target elevations. Wortman

used the forecasts for January to June 2007 at Dworshak and Libby as an example for comparing the different forecasting techniques.

There are four types of forecasts currently available:

1. The COE uses its monthly regression forecasts as the basis for determining reservoir flood control elevations.
2. The Northwest River Forecasting Center produces monthly regression forecasts using a different regression technique than the COE uses.
3. The Northwest River Forecasting Center's weekly ESP forecast begins with a precipitation forecast for the first 10 days, followed by 45 years of historic temperature and precipitation sequences superimposed on each other. The average of these 45 forecasts can be used to produce an additional forecast.
4. Beginning last year, the Natural Resources Conservation Service began using an experimental demonstration technique to produce a daily regression forecast.

Jim Litchfield (Montana) asked whether forecasting weekly or biweekly instead of monthly increases forecasting accuracy. This presentation doesn't indicate that would be true, he said; Wortman agreed it just produces more forecasts. There was a problem last year with the Libby ESP model drifting off course, so the NWRFC made a major adjustment to it at the end of March, and the forecast dropped by a million acre-feet.

After using last year as a test case to compare all four forecasting techniques, Wortman found the COE's monthly principal components regression forecast meets or exceeds all the others in terms of accuracy. ESP forecasts are also useful, but there are concerns that the models won't be robust enough to be reliable until several more years of testing and verification have been completed. The new NCRS daily forecast is promising, but currently shows an unacceptable bias: the NRCS forecasts do not presently consider the observed inflow volumes. There was general agreement among TMT members that this is problematic. If daily forecasting becomes a tool the COE looks at more closely, MacKay asked the COE to let TMT know.

5. Chum Operations

A. USGS Study Results. Ken Tiffan (USGS) presented the results from a 2005 study of the effects of elevated flows on chum spawning in the Ives Island area. Data were collected at tailwater elevations of 13.5 to 15.5 feet (the base condition was 11.5 feet) at 5-minute intervals for periods of 8 consecutive hours. Using an acoustic telemetry array suspended above the water surface to detect

acoustically- tagged fish, the study focused on whether (and to what extent) higher flows displaced fish from their redds.

Three factors made the study results uncertain: small sample sizes, the difficulty of tagging fish in the productive phase of their spawning cycle; and pinpointing the exact location of redds. Of 40 tagged fish, 3 left the area and 15 didn't apparently have a redd, leaving 22 study subjects of which 3 were males.

Tiffan presented the findings from one day's research as an example. At a tailwater elevation of 13.5 feet, fish hovered near their redds, based on observation of 12 females. When flows raised the tailwater elevation to 14.7 feet, all of the tagged fish moved into areas near the shoreline with lower velocities. They returned to their original locations (presumably where the redds were) once flows came down again.

Flows above a tailwater elevation of 13.5 feet were likely to elicit movement away from redds and toward shorelines, Tiffan concluded. At 13.5 feet, only one fish in 12 moved during the 8 hour study period. Flows around 150 kcfs result in tailwater elevations of 13-14 feet at Ives Island, depending on tides. There was a lot of variation in fish behavior during the higher flows, probably depending on where they were in the spawning cycle. The tagged fish returned to their presumed redd locations when flows declined. Typically, chum spawn in the wider channel north of Ives Island, but if flows remain high long enough, the fish will spawn on the narrower side south of the island. Most fish can't dig in higher flows, especially at a 15.5 foot tailwater elevation.

B. Chum Operations. There are no chum yet, Cindy LeFleur (Washington) said. The expectation is for fish monitoring to continue over this period, and when fish are seen, flows will stabilize at about 11.5 foot tailwater elevation, Wagner said. MacKay pointed out that the next 10 days or so are predicted to be dry, with flows of 80-100 kcfs at Bonneville. We would need to draft ½ foot to a foot at Grand Coulee per day to increase flows under these conditions, she said. According to an STP run for Grand Coulee, flows should increase to 90 kcfs starting November 8 to achieve a tailwater elevation of 11.5 feet at Bonneville, Adams said. That's 25-30 kcfs more than Grand Coulee is putting out today, MacKay noted.

Traditionally, chum don't show up until around the first week of November, Rick Kruger (Oregon) said, so it might be a problem to wait until November 8 to start drafting Grand Coulee. Water in the lower river can be used for that without necessarily having to draft from Grand Coulee, Scott Bettin (BPA) pointed out. Washington will notify TMT when the chum have arrived and flows should begin. There could be a TMT conference call before the next regular meeting to coordinate the initiation of chum flows.

{The following day, Cindy LeFleur sent TMT members a schedule of 2007 chum surveys to be conducted in three areas on the mainstem Columbia River: Ives Island; Multnomah, Horsetail and St. Cloud; and I-205. Weekly counts will be sent to the Fish Passage Center and posted on their website. Chum surveys will also be conducted in the Grays River system and on gorge tributaries.}

6. Burbot Operations

Detailed discussion of this topic was postponed until a project leader is available to meet with TMT. Adams said his understanding is that there probably won't be an SOR submitted on Libby operations for burbot this year. Scott Bettin added that if an SOR is submitted it will only involve temperature management and TMT will not need to act on the operation.

7. 2008 Draft Water Management Plan

Scott Boyd (COE) gave a brief update. The Action Agencies have done some internal work on the draft, and now it awaits further revision until the Bi-Op is released on October 31. Robin Gumpert invited TMT members to attend the all-day IT meeting on November 8, which will involve detailed Bi-Op discussion.

8. TMT Year End Review Agenda

TMT members discussed the draft agenda for their year-end review on November 28. The group discussed ways of cutting the agenda so that all the items can be covered in a day. There was a suggestion to delete all non-operational issues from agenda item 5 and discuss the relevant study developments at TMT meetings throughout the year. TMT members discussed other issues and the best ways of handling them – year-end review or regular meeting? MacKay advocated using the year-end review as a forum to identify problems rather than solve them. The group agreed that scheduling topics on a calendar of TMT meetings throughout the coming year would be a useful year-end exercise.

Zero flow could be handled better in a regular meeting prior to December 1, when the zero flow window begins, rather than at the year-end review. This topic was moved to the next TMT meeting on November 7.

Hells Canyon operations was assigned to Rich Domingue (NOAA), who can inform TMT of what the final EIS says and how it will affect Idaho Power's operation of Hells Canyon Dam going forward.

TDG management needs to be addressed well ahead of spill season in order to increase everyone's comfort zone, Wagner said. It has been added to the year-end agenda under operations review.

Scheduled outages should be announced ahead of time so TMT members aren't surprised, MacKay said. A January agenda item could be a review of the scheduled outages in the Fish Passage Plan, Bettin suggested. LeFleur suggested adding mechanical issues and scheduled outages to the standard operations review at all TMT meetings.

Reservoir operations in some cases went extraordinarily well last year, Wagner said, particularly Dworshak operations and management of VAR-Q flows at Libby. He noted that the drafting rate for chum seemed excessive for a 13.5 foot tailwater elevation, though it worked out and Grand Coulee reached its April 10 target elevation.

Pacific lamprey passage discussion could focus on operations that might benefit lamprey without hurting salmon passage, Wagner said. There was interest in updates from the Pacific lamprey work group chaired by Dave Clugston.

Other topics to be scheduled on the TMT meeting calendar for the next year include juvenile migration, the water management plan, bird predation in the estuary, marine mammal research, and the impact of court oversight on river operations. There was general consensus that not all topics can be covered in the year end review, and some will be better addressed in regular TMT meetings.

It's important to get past successes on record, LeFleur and Wagner agreed. The group considered revising the agenda so the discussion moves from project to project, instead of from topic to topic, following the same logic Tony Norris recently used to reconfigure the WMP.

Gumpert will revise the agenda in light of today's conversation and send it out for TMT review prior to the November 7 meeting.

9. Operations Review

a. Reservoirs. Libby is at elevation 2,439 feet, with inflows and outflows running around 4.5 kcfs, Adams said. The year-end flood control elevation will be 2,411 feet on December 31, unless the December water supply forecast is less than 95% of normal. The maximum Libby elevation if the forecast is less than 88% of normal would be 2,426.5 feet.

Albeni Falls is at elevation 2,057.4 feet at the Hope gage, with inflows of 13.2 kcfs and outflows of 19.2 kcfs. The reservoir is being drafted to an elevation of 2,055 feet by November 20, with an expected elevation of 2,056 feet by October 31.

Dworshak forebay is at elevation 1,517.59 feet, with inflows of 1.3 kcfs and outflows of 1.5 kcfs. The 7-day inflow average at Lower Granite is 20 kcfs.

The 7-day inflow average at McNary is 90-95 kcfs. Bonneville outflows were 108 kcfs yesterday.

Hungry Horse is at elevation 3,533.46 feet, discharging an average of 2.0 kcfs, John Roache (BOR) said. Grand Coulee is at elevation 1,287.2 feet, with flows averaging 60-70 kcfs over the past few days.

b. Fish. Juvenile fall Chinook numbers are up quite a bit to 1,500 fish passing per day at Lower Granite, apparently an effect of recent rain, Wagner said. Adult returns are nothing unusual, LeFleur said. The fall escapement goal of 43,000 fish at McNary was met (53,000 fish to date). Steelhead passage peaked on a single day, but the overall run has been close to average. Only jack returns have been unusually high this past year; LeFleur will talk about that at the year-end review. There was discussion of Hanford runs vs. Snake runs, with greater apparent declines on the Hanford side. Jacks are generally up for all populations, Wagner said. Whether that can be credited to increased spill is questionable.

c. Power System. There is nothing to report, Robyn MacKay (BPA) said.

d. Water Quality. There is nothing to report, Jim Adams said.

9. Next Meetings

The next TMT meeting will be in person on November 7 in the Mount St. Helens room at NOAA's Portland offices. Topics discussed at that meeting will include the year-end review agenda, chum operations, and zero flow operations. There could be a TMT call before then if needed to initiate chum flows. This summary prepared by consultant and writer Pat Vivian.

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Robyn MacKay	BPA
John Roache	BOR
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